

CLAIMS

1. A routing guide system for displaying an image of a predetermined guide point on a traveling road of a mobile body, comprising:

storage means installed outside said mobile body for storing data of images at a plurality of guide points;

distance detection means for detecting a distance from a current position of said mobile body to a next guide point;

image request generation means for making an image request for said next guide point when the distance detected by said distance detection means becomes a first predetermined distance or less;

transmission means installed outside said mobile body for reading the image of said next guide point from said storage means in response to said image request, and sending the image to said mobile body; and

display control means for causing said mobile body to receive the image transmitted from said transmission means, and causing a display device to display the image.

2. The routing guide system according to Claim 1, wherein said mobile body is a vehicle,

said distance detection means and said image request generation means are installed in a terminal device mounted in said vehicle, along with said display means and said display

control means, and

    said storage means and transmission means are a server installed outside said vehicle.

3. The routing guide system according to Claim 1 or 2, wherein said image request includes the current position of said mobile body, a heading direction of said mobile body, and the next guide point as information.

4. The routing guide system according to Claim 2 or 3, wherein said terminal device further comprises route setting means for setting a route from the current position of the vehicle to the destination, and said distance detection means measures the distance from the current position of the vehicle to the next guide point on the route being set by said route setting means.

5. The routing guide system according to Claim 2, 3 or 4, wherein said terminal device further comprises a camera for capturing an image in front of the vehicle, and said display control means causes said display device to display the image in front of said vehicle captured by said camera when the distance detected by said distance detection means becomes not more than a second predetermined distance that is shorter than said first predetermined distance.

6. The routing guide system according to Claim 2 or 5, wherein said terminal device further comprises transmission means for sending the image in front of the vehicle captured

by said camera to said server along with additional information comprising the current position of said vehicle, a heading direction of said vehicle and a next guide point when the distance detected by said distance detection means becomes not more than a third predetermined distance that is shorter than said second predetermined distance, and said server comprises:

receive means for receiving the image and additional information transmitted from said transmission means of said terminal device;

image judgment means for determining whether an image that satisfies image conditions including the current position, heading direction and guide point, specified in the additional information received by said receive means, is stored in said storage means; and

means for storing the data of image received by said receive means in said storage means when said judgment means determines that the image that satisfies said image conditions is not found in said storage means.

7. The routing guide system according to Claim 6, wherein said server further comprises:

identification degree setting means for setting an identification degree of a guide point indicated by an image received by said receive means according to said received image;

target object judgment means for applying a matching process between the existing image stored in said storage means and said received image when said judgment means determines that the image satisfying said image conditions exists in said storage means, so as to determine whether a target object at the guide point has changed; and

means for storing data of said received image in said storage means if said target object judgment means determines that the target object at the guide point has changed.

8. The routing guide system according to Claim 7, wherein said server further comprises:

identification degree judgment means for determining whether the identification degree of said received image is higher than the identification degree of said existing image if said target object judgment means determines that the target object at the guide point has not changed; and

means for storing data of said received image in said storage means if said identification degree judgment means determines that the identification degree of said received image is higher than the identification degree of said existing image.

9. A routing guide method for displaying an image of a predetermined guide point on a traveling road of a mobile body, comprising:

a distance detection step of measuring a distance

from a current position of said mobile body to a next guide point;

an image request generation step of making an image request for said next guide point when the distance detected in said distance detection step becomes a first predetermined distance or less;

a transmission step, provided outside said mobile body, of reading the image of said next guide point from storage means storing data of images of a plurality of guide points in response to said image request, and sending the image to said mobile body; and

a display control step of causing said mobile body to receive the image transmitted in said transmission step, and causing a display device to display the image.

10. A navigation device for use with a mobile body for displaying an image of a predetermined guide point on a traveling road of the mobile body, comprising:

distance detection means for measuring a distance from a current position of said mobile body to a next guide point;

image request generation means for making an image request for said next guide point when the distance measured by said distance detection means becomes a first predetermined distance or less; and

display control means for receiving the image

transmitted from outside said mobile body in response to said image request, and displaying the image on a display device.